A PERSPECTIVE ON WATER MANAGEMENT PRACTICES AND PROGRAMS IN THE APALACHICOLA-CHATTAHOOCHEE-FLINT DRAINAGE BASIN FROM THE BOTTOM UP

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REFERENCE: Proceedings of the 1991 Georgia Water Resources Conference, held March 19 and 20, 1991 at The University of Georgia. Kathryn J. Hatcher, Editor, Institute of Natural Resources, The University of Georgia, Athens, Georgia 1991.

INTRODUCTION

The Apalachicola-Chattahoochee-Flint (ACF) watershed drains 19,600 square miles of Georgia, Alabama, and Florida into the Gulf of Mexico (Figure 1). About three-quarters of the drainage basin is in Georgia. The basin's water resources are used for a variety of purposes including: municipal, industrial and agricultural water supply; commercial navigation; hydropower; wastewater dilution; recreation; and commercial and recreational fishing.

Between 1950 and 1980, the combination of the relatively undeveloped nature of much of the basin and what has proved to be a relatively wet climatic period left most water managers with the expectation that there always would be ample water for all demands in the basin. During this time, the major source of confrontation between interstate water interests in the basin was the extent to which the Apalachicola River should be structurally modified to provide the 9 x 100 foot federal navigation channel on a year-round basis. Increased demands for water in the basin, coupled with several droughts during the 1980s, however, have changed this perspective.

The issue of how the ACF basin's water resources should be managed has been brought to the forefront with the filing of a lawsuit by the State of Alabama in 1990 and a subsequent motion to intervene by Florida. The lawsuit concerned a proposal to reallocate a portion of Lake Lanier's conservation storage pool from hydropower to municipal supply for Metropolitan Atlanta. Florida's intervention was more related to its concern over the management of water throughout the basin than to the impacts of the Lake Lanier reallocation in and of itself.

The lawsuit and associated efforts to negotiate its resolution may ultimately have a strong influence on how the water resources of this and other multi-state watersheds within the southeast will be managed over the next several decades. It is important for water managers to understand both the need to manage watersheds from a system-wide context, and thus the implications of their water management decisions on adjacent states.

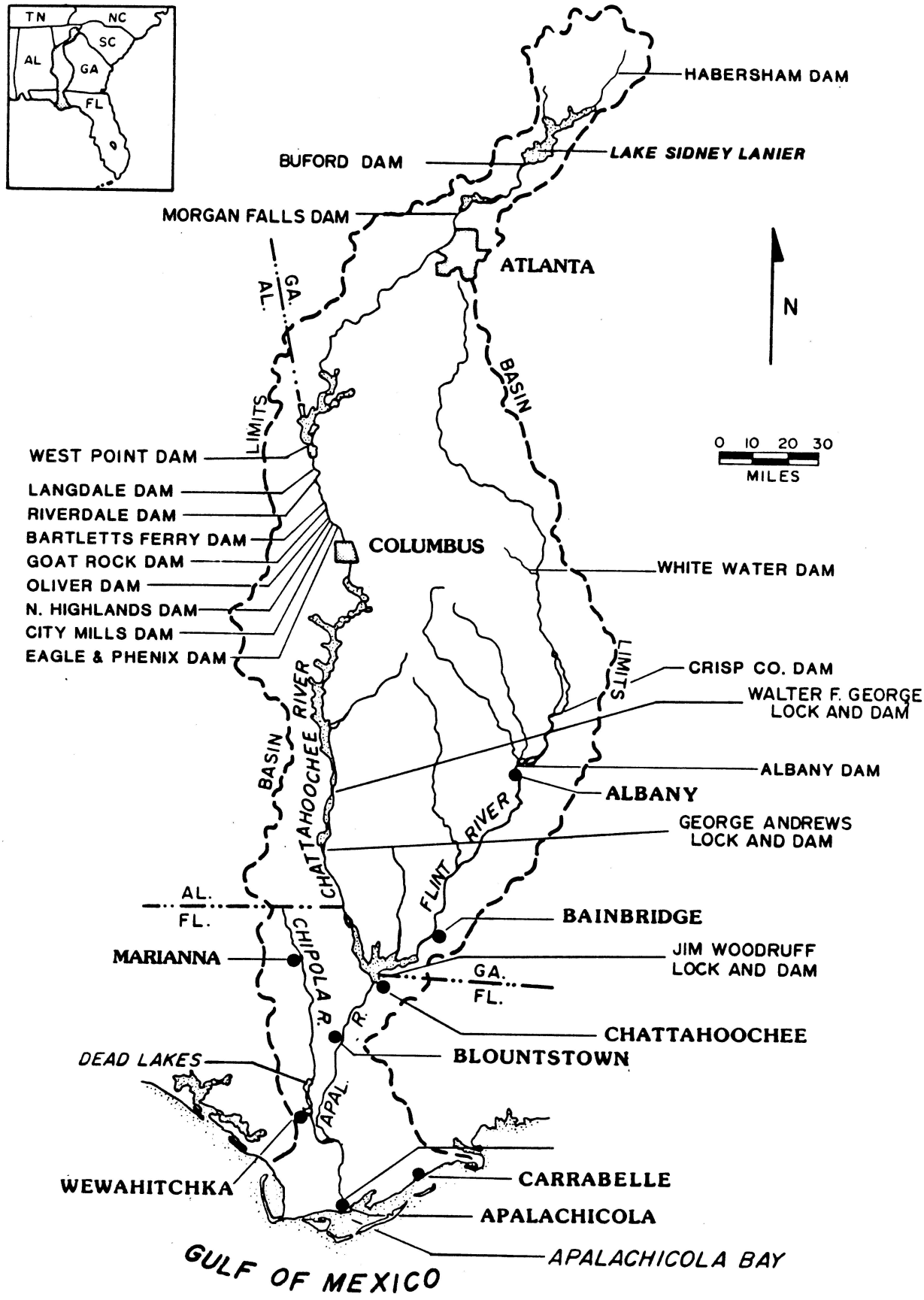
BACKGROUND

The Apalachicola estuary supports a major fishery which yields 90% of Florida's and 10% of the nation's oyster harvest, as well as sizable yields of penaeid shrimp, blue crab and fin-fish. The estuary also is an important nursery ground. The high productivity of this estuary is the direct result of nutrients transported into the estuary by the Apalachicola River, the salinity regime of the estuary as determined by inflow from the river, its relatively unpolluted status, and a barrier island chain which traps the nutrients and fresh water (Livingston, 1984). About two-thirds of the commercial species landed in the Gulf of Mexico are estuarine dependent (Stickney, 1984). Higher disease and predation levels are linked to increased salinity levels in the estuary. The productivity of the estuary, therefore, is associated with the extent, duration, and timing of minimum and maximum flows in the Apalachicola River (Meeter et al., 1979; Livingston, 1984).

Since over 80% of the ACF drainage basin lies above the Florida state line, flow in the Apalachicola portion is predominantly defined by rainfall and water management practices in Alabama and Georgia (Meeter et al., 1979). Although the Chattahoochee and Flint basins are nearly equal in area, their effects on flow in the Apalachicola River differ. During extreme low flows, the spring-fed Flint River contributes most of water to the Apalachicola River. The proportional contribution during medium-to-low flow is more equal; and the Chattahoochee contributes the major portion during peak flows (USACOE et al., 1984). During extreme low flows, agricultural irrigation withdrawals can significantly affect the base-flow in the Flint River and thereby can influence flow in the Apalachicola River (Hayes et al., 1983). As a result of the inextricable link between the seafood harvest

APALACHICOLA - CHATTAHOOCHEE - FLINT RIVER BASIN

(ACF)



from the Apalachicola estuary and flow in the Apalachicola River, and the fact that flow is influenced by rainfall and human activities throughout the basin, the State of Florida has attempted to pursue the management of the basin from a system-wide context for over a decade. It is to the credit of all involved parties that these efforts have occurred before the estuary's productivity has been seriously impaired.

Past Efforts to Manage the ACF from a Basin-wide Context. In this decade, several efforts have been made to pursue the goal of basin-wide water management. Such management considers all water uses in context with each other from a system-wide perspective. In 1979, when the Apalachicola Bay was declared a National Estuarine Sanctuary, the governors of the states of Florida, Georgia, and Alabama agreed to make the release of related funds from the federal government contingent on the submittal of a proposal to the U.S. Water Resources Council (WRC) for funding of a Level B Study in the basin. This study was to evaluate water usage and management in the ACF from a basin-wide perspective and was to have been undertaken by the three states and the Corps of Engineers. Although the proposal was given the highest priority among new starts nationwide by the WRC in 1981, this ranking proved meaningless with the abolition of the WRC by the Reagan Administration (Leitman, 1987).

As a result of a confrontation over the removal of rock shoals impeding the federal navigation channel in the Apalachicola River, the three governors signed a Memorandum of Agreement (MOA) in 1983 with the District Engineer for the Mobile District of the Corps. The MOA allowed the rock shoals to be removed and directed all the parties to develop a basin-wide water assessment, a navigation maintenance plan, a drought management plan, and a water management strategy for the ACF system. The MOA also created a federal/ interstate coordinating body to administer and oversee implementation of the MOA.

Although the MOA had no authority or guarantees to assure its implementation, it did provide for a framework and forum in which interstate water management conflicts could be addressed. The MOA also temporarily allowed the issue to be refocused from that of a conflict between varying interests to one of management of the river system for all interests. The basin-wide water management strategy to be prepared under this agreement, however, was never completed, let alone implemented, before the funds allocated to the Corps by Congress for this study effort were exhausted. The interstate coordinating body created by this agreement met rarely and provided little leadership toward preparing a basin-wide management structure. In addition, the coordinating body played a minimal role in addressing the issues which ultimately led to the lawsuit discussed below (Leitman, In press).

The Current Dispute. In the fall of 1989, two proposals concerning the development of a Water Control Plan for the ACF basin and the reallocation of water in storage at Lake Sidney Lanier from hydropower to water supply were presented by the Corps to the State of Florida for comment (USACOE, 1990). Included with these was an Environmental Assessment which concluded that the reallocation proposal and Water Control Plan would have no significant impact on environmental resources. The Water Control Plan was intended to formally describe ongoing Corps water management practices in the basin. The reallocation proposal was intended to supply metropolitan Atlanta's projected water supply needs until the year 2010.

These proposals were met with widespread opposition which was based on the lack of time to thoroughly review the documents, doubts as to whether a proper assessment of the environmental and economic impacts downstream had been accomplished, potential consumptive water losses, continued water quality problems at West Point reservoir, and potential impacts on the environmental resources of Apalachicola River and Bay. Lake Lanier recreational interests were also strongly opposed to the proposal because it would lead to lower lake levels. And, power interests expressed opposition because of a projected decrease in power revenues and a disagreement with the Corps's policy concerning mitigation.

DISCUSSION

Several key assumptions relating to water management regulations and practices in the basin over the last four decades warrant reconsideration. There is a widespread perception that adequate water exists to meet all of man's desires if only it is managed properly. Increased utilization of water resources has been pursued with vigor, based upon the assumption that sufficient water will always be available. Development of water resources under this philosophy, however, does not necessarily guarantee the concomitant protection of the natural resource values of the watershed.

It is also assumed that historical patterns of water availability will continue into the future. This assumption is of concern because the period between 1954 and 1980, when the basin was extensively developed, was also the wettest in the seventy year period-of-record for USGS stream gages on the river (Leitman et al., 1983; Raney et al., 1985). Therefore, some water users may be basing development decisions on the faulty perception that a relatively wet period was normal. And, when the issue of global climatic change and the high potential for altered rainfall patterns in the southeast is factored into this situation, this last assumption especially appears open to question (Waggoner, 1990).

The Path Toward Resolution. Historically, the management of water resources in the ACF basin has been piecemeal. Management decisions are typically based on perceived impacts from individual actions rather than from a cumulative perspective. Furthermore, from the perspective of the upper basin, the Chattahoochee and the Flint are two separate watersheds, whereas to lower basin interests they are clearly one watershed. Failure to manage the ACF as a single basin could ultimately prove troublesome for users of water resources in the lower basin.

If the multi-purpose utilization of the water resources of the basin is to be optimized in the future, the following series of questions warrants close consideration by water managers: Can the water resources of a basin such as the ACF be effectively managed within the context of existing political, economic, and social parameters? Or, is an alternative arrangement necessary? How shall the demands of instream and out-of-stream uses be equitably prioritized? How can the demands of up-basin and down-basin interests be balanced? And, what are the needs and priorities of natural systems such as the Apalachicola estuary relative to other demands in the basin?

Such questions need to be answered during the establishment of a mechanism and means to effectively handle the dilemma of managing a finite resource subject to expanding demands. Resolving this dilemma becomes even more untenable with the specter of global climatic warming suggesting that past rainfall patterns may not necessarily predict future rainfall patterns.

If the filing of the lawsuit is to ultimately have a positive influence on how the water resources of this basin will be managed over the next several decades, it will need to result in a negotiated agreement which addresses all aspects of the problem. Litigation alone only addresses part of the problem. In turn, any negotiated agreement developed by the three states and the federal government will need to: 1) be specific, enforceable, and recognize all parties' water rights; 2) treat the Apalachicola, Chattahoochee and Flint as a single basin; 3) incorporate the linkage between growth, land use, and water resources; 4) lead to the preparation of an implementable basin-wide water management strategy; 5) promote the establishment of a meaningful forum to manage water resources from a basin-wide context; 6) encompass both water quantity and water quality issues; and 7) consider both instream and out-of-stream uses of water by both man and the natural system.

Before any memorandum of agreement is signed by the states that would lead to withdrawal of the lawsuit, the tasks to accomplish the above need to be carefully identified and endorsed by all parties. At present, proposals to resolve this issue center around the conducting of a basin-wide assessment of water resources funded through the Corps. Currently, however, Florida is faced with the dilemma of a request from the Corps to enter into such a memorandum of agreement prior to the completion of a detailed plan of study for this effort and prior to its endorsement by all parties. The issue of how the findings of this study will be integrated into the actual management of the basin's water resources also has not been addressed.

CONCLUSION

In summation, the present situation dictates that establishment of a permanent mechanism (i.e., interstate compact or river basin commission) to objectively and effectively deal with the management of the ACF basin's water resources from a system-wide context is warranted. The future scenarios for the water resources of the basin center around the question of whether demands for the water resources will be managed consistent with the system's inherent capabilities or whether the watershed will be expected to accommodate all of man's demands upon it. Considering the substantial problems which have been encountered in an era when the availability of water resources was relatively predictable, the unpredictability associated with global warming does not bode well for the future.

It is ironic that although water is essential to man's welfare, it is typically an undervalued resource. Since we are entering a period of increased unpredictability regarding the future availability of water resources, actions need to be taken to assure that as a society we behave in a more holistic fashion in regard to the utilization of water resources and that water resources are valued more appropriately. In essence, our choices are to change society's value systems or be willing to accept the continued degrading of our natural resources and serious confrontations over water rights in the future.

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